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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/556,249 | 11/10/2005 | Xuecheng Qian | CN 030011 | 6573 |
| 65913 | 7590 | 09/18/2008 | EXAMINER | |
| NXP, B.V. | | | TORRES, JUAN A | |
| NXP INTELLECTUAL PROPERTY DEPARTMENT | | | | |
| M/S41-SJ | | | ART UNIT | PAPER NUMBER |
| 1109 MCKAY DRIVE | | | 2611 | |
| SAN JOSE, CA 95131 | | | | |
| NOTIFICATION DATE | | DELIVERY MODE | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

| | | |
|------------------------------|----------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/556,249 | QIAN, XUECHENG |
| | Examiner JUAN A. TORRES | Art Unit 2611 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 10 November 2005.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-8 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-8 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 10 November 2005 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-166/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____
 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because

a) exceed 150 words in length

b) The recitation in line 1 of the abstract "ADC" seems to be improper, because this acronym has not been introduced previously; it is recommended to be changed to "analog-to-digital converter (ADC)"

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 5-8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 5, claim 5 claim a process that is not tied to another statutory class (such as a particular apparatus) or transform underlying subject matter (such as an article or materials) to a different state or thing, and a process to be eligible under 35 USC § 101, must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing (see MPEP 2106.IV.B and 2106.IV.C).

Regarding claims 6-8, claims 6-8 are rejected because they depend directly or indirectly from claim 5 and claims 5 is rejected.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Östman (US 6061385 A).

Regarding claims 1 and 5, Östman discloses a processing unit that processes received signals and filters the processed signals in an analog domain to output filtered analog signals (figures 2 and 4 blocks 1-13 column 6 lines 22-47); an analog-to-digital converter (ADC) that converts the filtered analog signals into digital signals (figures 2

and 4 blocks 14 column 6 lines 62-66); and a digital filter that filters the digital signals from the ADC and attenuates residual interferers in the digital signals by a predetermined amount, so as to allow relaxation of tolerable quantization noise generated by the ADC to a pre-defined level to thereby substantially reduce a dynamic range of the ADC; wherein the ADC has a word length corresponding to the reduced dynamic range (figures 2 and blocks 50 and 32 column 6 line 49 to column 7 line 2).

Regarding claims 2 and 6, Östman discloses claims 1 and 5, Östman also discloses that the pre-defined level is higher than a level prescribed by the receiver's sensitivity (column 6 line 49 to column 7 line 2).

Regarding claims 3 and 7, Östman discloses claims 1 and 5, Östman also discloses that the pre-defined level of the quantization noise is maintained within a range, such that the total interference of the receiver is kept at a level not greater than an allowable level (column 6 line 49 to column 7 line 2).

Regarding claims 4 and 8, Östman discloses claims 1 and 5, Östman also discloses a demodulator that demodulates the filtered digital signals from the ADC to recover user data (figure 4 block 33 column 7 lines 20-34).

Claim 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Mathe (US 6243430 B1).

Regarding claims 1 and 5, Mathe discloses a processing unit that processes received signals and filters the processed signals in an analog domain to output filtered analog signals (figure 2 blocks 112-126 column 5 line 62 to column 6 line 12); an analog-to-digital converter (ADC) that converts the filtered analog signals into digital

signals (figure 2 block 240 column 6 lines 12-17); and a digital filter that filters the digital signals from the ADC and attenuates residual interferers in the digital signals by a predetermined amount, so as to allow relaxation of tolerable quantization noise generated by the ADC to a pre-defined level to thereby substantially reduce a dynamic range of the ADC; wherein the ADC has a word length corresponding to the reduced dynamic range (figure 2 blocks 250 and figure 5 column 8 lines 4-42).

Regarding claims 2 and 6, Mathe discloses claims 1 and 5, Mathe also discloses that the pre-defined level is higher than a level prescribed by the receiver's sensitivity (figure 2 blocks 250 and figure 5 column 8 lines 4-42).

Regarding claims 3 and 7, Mathe discloses claims 1 and 5, Mathe also discloses that the pre-defined level of the quantization noise is maintained within a range, such that the total interference of the receiver is kept at a level not greater than an allowable level (figure 2 blocks 250 and figure 5 column 8 lines 4-42).

Regarding claims 4 and 8, Mathe discloses claims 1 and 5, Mathe also discloses a demodulator that demodulates the filtered digital signals from the ADC to recover user data (figure 2 blocks 250 and figure 5 column 8 lines 4-42).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Geraci, "Shaping the quantization noise in high resolution digital spectroscopy: theory and experiments", IEEE Nuclear Science Symposium, 1997, 9-15 Nov. 1997

b) Dedic, "A 16X oversampling CMOS ADC with 100 kHz bandwidth and 90dB SNR", Second International Conference on Advanced A-D and D-A Conversion Techniques and their Applications, 1994. 6-8 Jul 1994 Page(s):82 - 89

c) Darveau (US 6240150 B1) discloses filtering interference in a modem receiver

d) Martin (US 6498819 B1) discloses an integrated multi-mode bandpass sigma-delta receiver subsystem with interference mitigation and method of using same.

e) Ciccarelli (US 6785529 B2) discloses I-Q mismatch compensation in a low IF or zero IF receiver

f) Parssinen (US 6993291 B2) discloses continuously controlling the dynamic range from an analog-to-digital converter

g) Zogakis (US 6993099 B2) discloses communications receiver architectures and algorithms permitting hardware adjustments for optimizing performance

h) Mostafa (US 7110732 B2) discloses subsampling RF receiver architecture

i) Minnis (US 7116965 B2) discloses a radio receiver

j) Manickam (US 7254198 B1) discloses a receiver system having analog pre-filter and digital equalizer.

k) Qian, (WO/2004/102189) discloses wireless communication receiver having an ADC with a limited dynamic range.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUAN A. TORRES whose telephone number is (571)272-3119. The examiner can normally be reached on 8-6 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Juan Alberto Torres
09/12/2008

/Juan A Torres/
Examiner, Art Unit 2611